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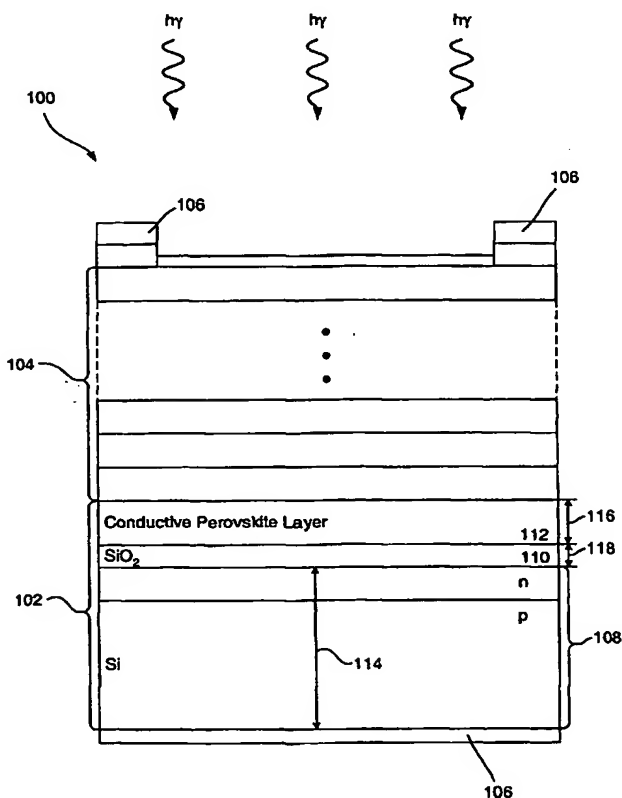
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(54) Title: MULTI-JUNCTION, MONOLITHIC SOLAR CELL WITH ACTIVE SILICON SUBSTRATE



(57) **Abstract:** A monolithic multi-junction (tandem) photovoltaic (PV) device includes one or more PV subcells epitaxially formed on a compliant silicon substrate (102). The compliant silicon substrate (102) includes a base silicon layer (108), a conductive perovskite layer (112), and an oxide layer (110) interposed between the base silicon layer (108) and the conductive perovskite layer (112). A PV subcell is formed within the base silicon layer (108) of the conductive silicon substrate (102). The conductive perovskite layer (112) facilitates the conduction of charge carriers between the PV subcell formed in the compliant silicon substrate (102) and the one or more PV subcells formed on the compliant silicon substrate (102).

**Declarations under Rule 4.17:**

- *as to the identity of the inventor (Rule 4.17(i)) for the following designations* AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, *ARIPO patent* (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), *Eurasian patent* (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), *European patent* (AT, BE, BG, CH, CY, CZ,

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